

US Patent Appln 10/003,700

## REMARKS

### STATUS OF CLAIMS

Claims 27-53 are pending in this application, claims 1-26 and claims 54-77 having been canceled.

Claims 27- 53 are pending in this application, claims 27 and 41 being the independent claims.

Claims 27-53 stand rejected under 35 U.S.C. 103(a) as being unpatentable over each of the following references: Zenteno, U.S. Patent No. 6,522,450, Jackel, U.S. Patent No. 6,175,436, Yariv, U.S. Patent Appl. Publication 2001/0004411, Lee et al., U.S. Patent No. 6,097,529, Digonnet et al., U.S. Patent No. 6,356,385, and Manning, U.S. Patent No. 5,999,293. These rejections are hereby traversed for at least the following reasons.

In accordance with the present invention, a method is provided for reducing the dispersion of an optical signal. The method begins by directing the optical signal to an input waveguide of an optical device. The input waveguide is coupled to a first input port of an  $N \times N$  network, where  $N$  is an integer greater than or equal to 2. The network has  $N$  input ports for receiving optical input energy and  $N$  output ports for providing optical output energy, wherein the optical output energy at each of the output ports arises from interference among the optical input energy received at the input ports. The optical device also includes  $(N-1)$  feedback paths optically coupling  $(N-1)$  of the input ports of the  $N \times N$  network to  $(N-1)$  of the output ports of the  $N \times N$  network. A remaining one of the output ports of the  $N \times N$  network provides a dispersion compensated optical output signal. As recited in claim 27, the method continues by selectively supplying gain or loss to optical energy in at least one of the feedback paths to reduce to a selected value the dispersion of the dispersion compensated optical output signal. Alternatively, as recited in claim 41, the method continues by selectively supplying gain or loss to optical energy in the  $N \times N$  network to reduce to a selected value the dispersion of the dispersion compensated optical output signal.

US Patent Appln 10/003,700

Neither Jackel, Yariv, Lee et al., Digonnet et al, nor Manning pertain to the reduction of the dispersion of an optical signal. As a result Applicant fails to see how any of these references can disclose the steps required to perform such dispersion reduction. In particular, these references do not show or suggest the step of reducing dispersion by selectively supplying gain or loss to the optical energy, which is required by independent claims 27 and 41. Accordingly, for at least this reason it is respectfully requested that the rejection of independent claims 27 and 41 and the claims that depend therefrom under 35 U.S.C. 103(a) as being unpatentable over each of Jackel, Yariv, Lee et al., Digonnet et al, and Manning be reconsidered and withdrawn.

The sole remaining reference, Zenteno, relates to a method for reducing dispersion compensation. Zenteno, however, only changes dispersion by varying the refractive index. Zenteno does not show or suggest the step of reducing dispersion by selectively supplying gain or loss to the optical energy, which is required by independent claims 27 and 41. Only the present inventor has recognized that dispersion can be reduced in this manner. Accordingly, for at least this reason it is respectfully requested that the rejection of independent claim 27 and 41 and the claims that depend therefrom under 35 U.S.C. 103(a) as being unpatentable over Zenteno be reconsidered and withdrawn.

### Conclusion

In view of the foregoing, it is believed that the application is now in condition for allowance and early passage of this case to issue is respectfully requested. If the Examiner believes there are still unresolved issues, a telephone call to the undersigned would be welcomed.

### Fees

If there are any fees due and owing in respect to this amendment, the Examiner is authorized to charge such fees to deposit account number 50-1047.